

DATE 07/23/13	SUSPENSE	ENGINEER RG	LOGGED IN 07/24/13	TYPE SWP	APP NO. PAXK1370555330
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☒ Application is One Which Requires Published Legal Notice

[D] ☒ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Eddie W. Seay
 Print or Type Name

Eddie W. Seay
 Signature

Agent
 Title

7/12/13
 Date

seay04@leaco.net
 e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? X Yes No

II. OPERATOR: Paladin Energy Corp.

ADDRESS: 10290 Monroe Drive, Suite 301 Dallas, TX 75229

CONTACT PARTY: David Plaisance PHONE: 214-654-0132

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? Yes X No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

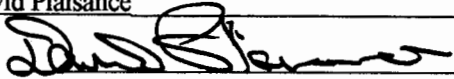
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: David Plaisance TITLE: V.P. Exploration & Production

SIGNATURE:  DATE: 7/9/2013

E-MAIL ADDRESS: dplaisance@paladinenergy.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.
Please show the date and circumstances of the earlier submittal: Filed when drilled

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

ATTACHMENT TO APPLICATION C-108

South Vacuum Unit 27-4
Unit P, Sect. 27, Tws. 18 S., Rng. 35 E.
Lea Co., NM

III. WELL DATA

- A.
 - 1) See injection well data sheets and attached schematics.
 - 2) See injection well data sheets and attached schematics.
 - 3) 4 ½" plastic coated tubing.
 - 4) Baker Tension Type.
- B.
 - 1) Injection formations are the Mississippian and Devonian.
 - 2) Injection interval from 10858' to 12400'.
 - 3) This was drilled as a producer.
 - 4) The next higher producing zone is the Strawn at approximately 10572'.
The next lower producing zone is the Montoya at approximately 13336'.

IV. NO.

V. MAP ATTACHED.

VI. LIST OF WELLS AND DATA ATTACHED.

VII. Paladin proposes to remove existing equipment and clean out well bore and plug down to the old Devonian perfs. Either re-perforate or acidize old perfs. Complete in existing Mississippian perfs and Devonian perfs. Run 4 ½" plastic tubing with 7" packer and set at approximately 10760'.

- 1) Plan to inject approximately 8000 bpd of produced water from Paladins own operation in offset production.
- 2) Closed system.
- 3) Average injection pressure should be approximately 1800# to 2000# or whatever limit OCD allows.
- 4) Analysis attached, only produced water.
- 5) Water from Paladins offset production from McKee, Devonian, and Silurian.

VIII. The proposed disposal formation is interbedded shale and limestone. The primary geologic formations are the Mississippian and Devonian from 10858' to 12400'.

The fresh water formation in the area is the Ogallala which ranges in thickness from 100' to 160'. Analysis of water well attached.

IX. ACID AS NEEDED.

X. WILL BE SUBMITTED WHEN DRILLED.

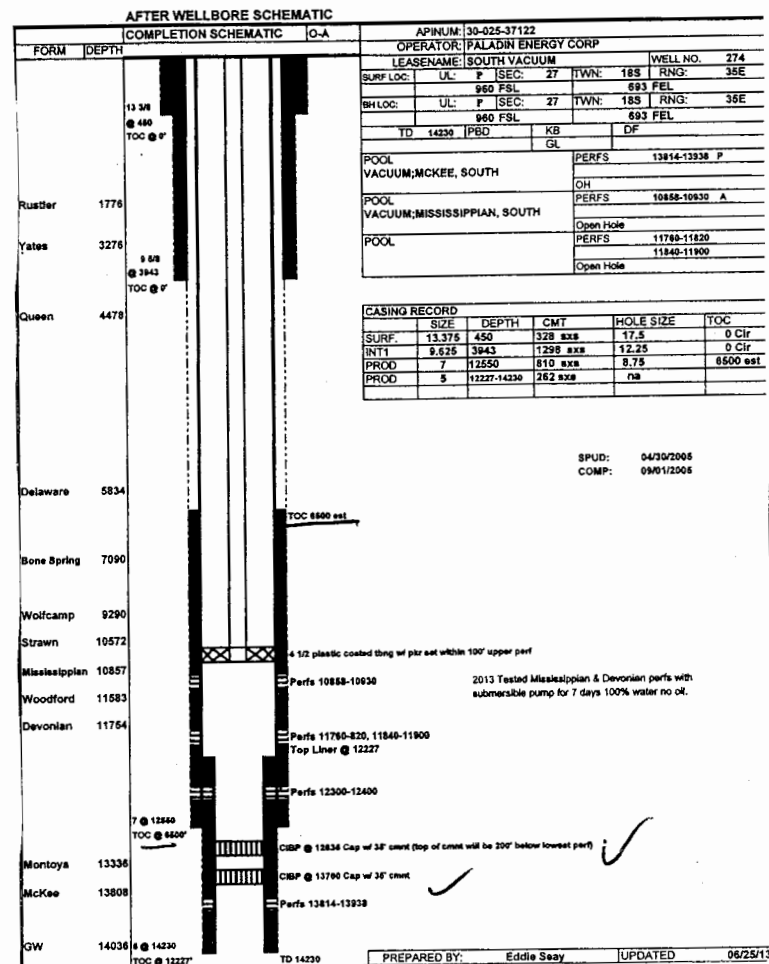
XI. ATTACHED.

XII. I, Eddie W. Seay, have examined all available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zones and any underground source of drinking water pertaining to this well.

XIII. ATTACHED.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Paladin Energy CorpWELL NAME & NUMBER: South Vacuum #274 (API 30-025-37122)WELL LOCATION: 960/S 693/E P 27 18 35 E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGEWELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 17 1/2 Casing Size: 13 3/8Cemented with: 328 SX. or _____ ft³Top of Cement: Surface Method Determined: CueIntermediate CasingHole Size: 12 1/4 Casing Size: 9 5/8Cemented with: 1200 1298 SX. or _____ ft³Top of Cement: Surface Method Determined: CueProduction CasingHole Size: 8 3/4 Casing Size: 7Cemented with: 810 SX. or _____ ft³Top of Cement: 6500 Method Determined: CalcTotal Depth: 14230 * 5" liner 12227/14230Injection Interval10858 feet to 12400

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 4 1/2 Lining Material: coated
 Type of Packer: Baker Tension
 Packer Setting Depth: 10758 or 100 ft from Top Perfs.
 Other Type of Tubing/Casing Seal (if applicable): None

Additional Data

1. Is this a new well drilled for injection? Yes ☒ No
 If no, for what purpose was the well originally drilled? McKee and
Mississippian + Devonian Producer
2. Name of the Injection Formation: Mississippian + Devonian
3. Name of Field or Pool (if applicable): South Vacuum
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. McKee at 13814-13938
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
The next higher zone is the Strawn at 10572
The next lower zone is Montoya at 13336

AFTER WELLBORE SCHEMATIC

COMPLETION SCHEMATIC		O-A	APINUM: 30-025-37122																															
FORM	DEPTH	OPERATOR: PALADIN ENERGY CORP																																
		LEASENAME: SOUTH VACUUM WELL NO. 274 SURF LOC: UL: P SEC: 27 TWN: 18S RNG: 35E BH LOC: UL: P SEC: 27 TWN: 18S RNG: 35E 960 FSL 693 FEL TD 14230 PBD KB DF GL POOL VACUUM;MCKEE, SOUTH PERFS 13814-13938 P OH POOL VACUUM;MISSISSIPPIAN, SOUTH PERFS 10858-10930 A Open Hole POOL PERFS 11760-11820 11840-11900 Open Hole																																
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Perfs 10858-10930 2013 Tested Mississippian & Devonian perfs with submersible pump for 7 days 100% water no oil.																																		
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Perfs 12300-12400																																		
7 @ 12550 TOC @ 6500'																																		
CIBP @ 12635 Cap w/ 35' cmnt (top of cmnt will be 200' below lowest perf)																																		
CIBP @ 13700 Cap w/ 35' cmnt																																		
Perfs 13814-13938																																		
5 @ 14230 TOC @ 12227' TD 14230																																		

WELLBORE SCHEMATIC AND HISTORY

COMPLETION SCHEMATIC		O-A	APINUM: 30-025-37122																																							
FORM	DEPTH		OPERATOR: PALADIN ENERGY CORP																																							
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Rustler	1776																																									
Yates	3276																																									
Queen	4478																																									
Delaware	5834																																									
Bone Spring	7090																																									
Wolfcamp	9290																																									
Strawn	10572																																									
Mississippian	10996																																									
Woodford	11583																																									
Devonian	11754																																									
Montoya	13336																																									
McKee	13808																																									
GW	14036																																									

13 3/8
@ 450
TOC @ 0'

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@ 3943
TOC @ 0'

7 @ 12550
TOC @ 6500'

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TOC @ 12227'

TOC 6500 est

Perfs 10858-10930

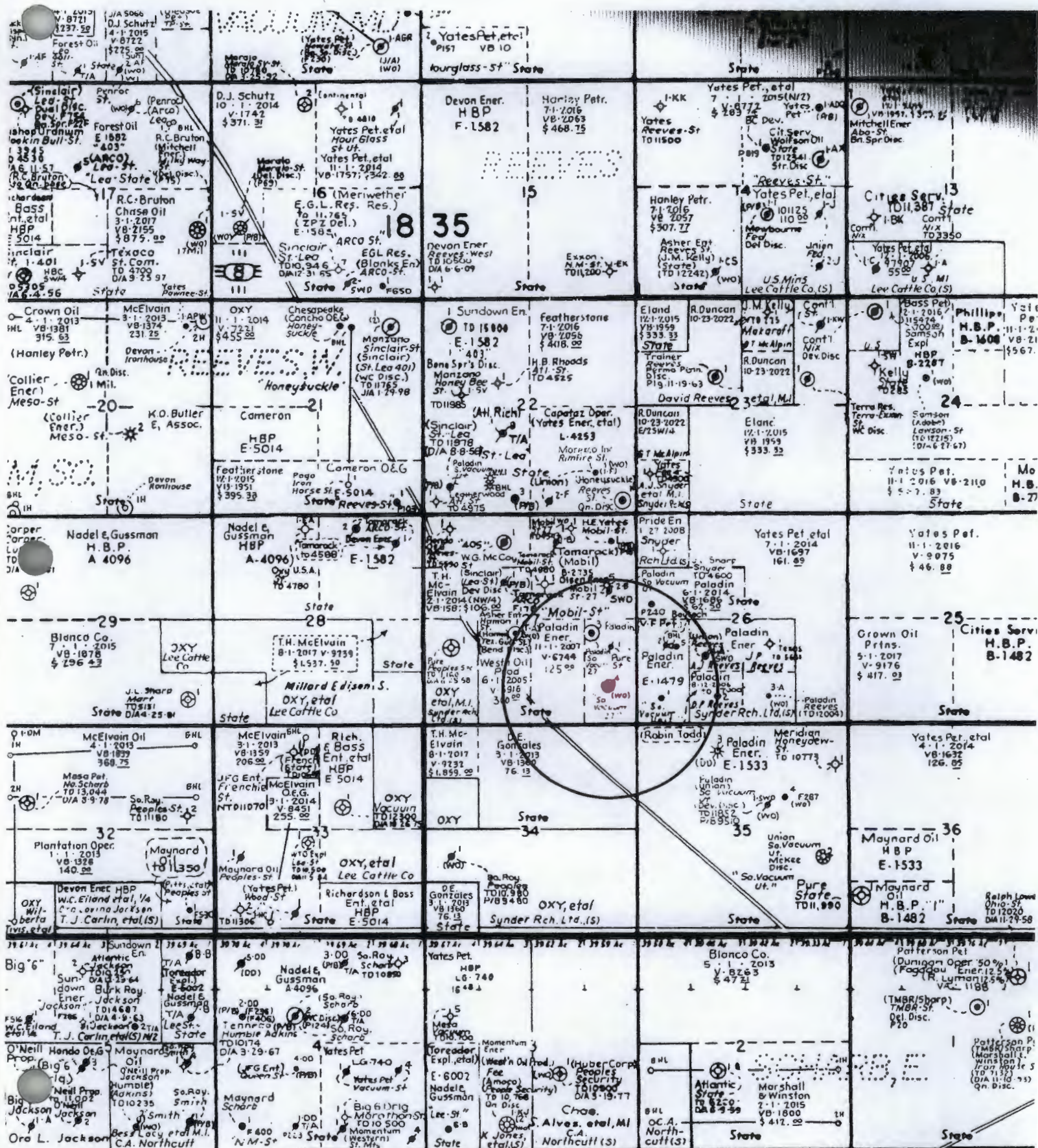
Perfs 11760-820, 11840-11900
Top Liner @ 12227

CIBP @ 13700 Cap w/ 35' cmnt

Perfs 13814-13938

TD 14230

2013 Tested Mississippian & Devonian perfs with
submersible pump for 7 days 100% water no oil.



DISPOSAL WELL

30-025-37122 SOUTH VACUUM 274 PALADIN ENERGY CORP 14230 G A Lea S P 27 18 S 35 E 960 S 693 E

Wells within 1/2 mile not penatating proposed disposal interval.

																5280	5280	Dist
API #	PROPERTY NAME	#	OPERATOR	TD	TYPE	STAT	CO	LAND	U/L	SEC	TWN		RNG		N/S		E/W	
30-025-36891	SOUTH VACUUM 27	3	PALADIN ENERGY CORP	10015	G	A	Lea	S	I	27	18	S	35	E	2300	S	1100	E 1400
30-025-03140	HAMON STATE	1	ASHER ENTERPRISES LTD. CO.	10864	O	A	Lea	S	K	27	18	S	35	E	2310	S	2310	W 2647
30-025-37554	VENTIMISTO 34	1	DAVID H ARRINGTON OIL & GAS INC	28	O	P	Lea	S	A	34	18	S	35	E	660	N	1244	E 1711

Wells within 1/2 mile penatating proposed disposal interval.

																5280	5280	Dist
API #	PROPERTY NAME	#	OPERATOR	TD	TYPE	STAT	CO	LAND	U/L	SEC	TWN		RNG		N/S		E/W	
30-025-03142	STATE SECTION 27	2	XTO ENERGY, INC	13813	S	A	Lea	S	H	27	18	S	35	E	1980	N	660	E 2340 ✓
30-025-37299	SOUTH VACUUM	275	PALADIN ENERGY CORP	14190	O	A	Lea	S	H	27	18	S	35	E	1700	N	760	E 2620 ✓
30-025-03144	SOUTH VACUU UNIT	127	PURE OIL COMPANY	11755	O	P	Lea	S	I	27	18	S	35	E	1980	S	660	E 1020 ✓
30-025-03138	LEA J STATE	1	PALADIN ENERGY CORP	11715	O	P	Lea	S	E	26	18	S	35	E	2310	N	330	W 2255 ✓
30-025-03137	REEVES 26	4	PALADIN ENERGY CORP	12230	S	A	Lea	P	K	26	18	S	35	E	1654	S	1654	W 2447 ✓
30-025-23900	STATE 26	2	BAYTECH INC	11700	O	P	Lea	S	L	26	18	S	35	E	1980	S	710	W 1734 ✓
30-025-37035	SOUTH VACUUM UNIT	265	PALADIN ENERGY CORP	15248	G	A	Lea	S	L	26	18	S	35	E	1940	S	980	W 1938 ✓
30-025-03134	SOUTH VACUUM UNIT	261	PALADIN ENERGY CORP	11755	O	A	Lea	S	M	26	18	S	35	E	660	S	660	W 1385 ✓

Two SWD3 in AOR

8wells/ 5active/ 3 P&A

30-025-03137/ Paladin / SWD-1092
open hole + perfs - Wolfcamp & Devonian

30-025-03142/ XTO/ R-8645
open hole - Ordovician

Three SWD 5 outside AOR but within SVU structure /active

30-025-03150 SWD-980
Paladin / SVU #351 / Devonian

30-025-03151 R-4147
Paladin / SVU #352 / Devonian

30-025-03145 SWD-1435 (New)
Sundown Energy / State Lea 405 Com* / Devonian

WELLBORE SCHEMATIC AND HISTORY

COMPLETION SCHEMATIC		APINUM: 30-025-03142																																											
FORM	DEPTH	OPERATOR: XTO ENERGY INC																																											
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>13 3/8 @ 422 TOC @ 0'</p> <p>9 5/8 @ 3900 TOC @ 0'</p> </div> <div style="width: 50%;"> <p>Cmnt did not circ to surf top unknown</p> <p>TOC 3850 TS</p> </div> </div>	Rustler	1747	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">LEASENAME: STATE SECTION 27</td> <td colspan="2">WELL NO. 2</td> </tr> <tr> <td>SURF LOC:</td> <td>UL: H</td> <td>SEC: 27</td> <td>TWN: 18S</td> </tr> <tr> <td colspan="2">1980 FNL</td> <td colspan="2">660 FEL</td> </tr> <tr> <td>BH LOC:</td> <td>UL: H</td> <td>SEC: 27</td> <td>TWN: 18S</td> </tr> <tr> <td colspan="2">1980 FNL</td> <td colspan="2">660 FEL</td> </tr> <tr> <td>TD 13813</td> <td>PBD</td> <td>KB</td> <td>DF</td> </tr> <tr> <td colspan="2"></td> <td>GL</td> <td></td> </tr> <tr> <td colspan="2">POOL VACUUM;DEVONIAN, SOUTH</td> <td colspan="2">PERFS 11570-11600</td> </tr> <tr> <td colspan="2">POOL VACUUM;BONE SPRING, SOUTH</td> <td colspan="2">PERFS 8823-8968</td> </tr> <tr> <td colspan="2">POOL SWD;DEVONIAN-MONT-SIMP</td> <td colspan="2">Open Hole 11950-13813</td> </tr> </table>			LEASENAME: STATE SECTION 27		WELL NO. 2		SURF LOC:	UL: H	SEC: 27	TWN: 18S	1980 FNL		660 FEL		BH LOC:	UL: H	SEC: 27	TWN: 18S	1980 FNL		660 FEL		TD 13813	PBD	KB	DF			GL		POOL VACUUM;DEVONIAN, SOUTH		PERFS 11570-11600		POOL VACUUM;BONE SPRING, SOUTH		PERFS 8823-8968		POOL SWD;DEVONIAN-MONT-SIMP		Open Hole 11950-13813	
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Penn	10313																																												
Mississippian	10733																																												
Devonian	11420	PERFS 11570-11600 sqz w/ 300 sxs																																											
plastic coated tbng w/ pkr set above open hole interval ✓																																													
Montoya	13105	7 @ 11950 TOC @ 3850'																																											
Simpson	13657	TD 13813																																											

R-8645

COMPLETION SCHEMATIC		O-A	APINUM: 30-025-37299																																													
FORM	DEPTH		OPERATOR: PALADIN ENERGY CORP																																													
			LEASENAME: SOUTH VACUUM	WELL NO. 275																																												
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		BH LOC:	UL: G SEC: 27 TWN: 18S	RNG: 35E																																												
			MD 14190 PBD KB DF	TVD 14044 GL																																												
			POOL VACUUM;MCKEE, SOUTH	PERFS 13804-13860																																												
			POOL VACUUM;DEVONIAN, SOUTH	PERFS 11712-11810																																												
			POOL	PERFS																																												
		CASING RECORD																																														
		SIZE	DEPTH	CMT	HOLE SIZE	TOC																																										
		SURF.	13.375	418	535 sxs	17.5	0 Cir																																									
		INT1	9.625	3887	1040 sxs	12.25	0 Cir																																									
		PROD	7	12724	635 sxs	8.75	7400 TS																																									
		PROD	5	12367-14187	276 sxs	6.25	12367																																									
		SPUD: 06/27/2005 COMP: 10/08/2005																																														
		<div style="display: flex;"> <div style="flex: 1;"> <p>COMPLETION SCHEMATIC</p> </div> <div style="flex: 1;"> <p>Well Data Summary</p> <table border="1"> <thead> <tr> <th>Formation</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Rustler</td> <td>1774</td> <td></td> </tr> <tr> <td>Yates</td> <td>3284</td> <td></td> </tr> <tr> <td>Queen</td> <td>4468</td> <td></td> </tr> <tr> <td>Delaware</td> <td>5704</td> <td></td> </tr> <tr> <td>Bone Spring</td> <td>6972</td> <td></td> </tr> <tr> <td>Wolfcamp</td> <td>9402</td> <td></td> </tr> <tr> <td>Strawn</td> <td>10464</td> <td></td> </tr> <tr> <td>Mississippian</td> <td>10810</td> <td></td> </tr> <tr> <td>Woodford</td> <td>11380</td> <td></td> </tr> <tr> <td>Devonian</td> <td>11568</td> <td></td> </tr> <tr> <td>Montoya</td> <td>13207</td> <td></td> </tr> <tr> <td>McKee</td> <td>13653</td> <td></td> </tr> <tr> <td>GW</td> <td>13900</td> <td></td> </tr> </tbody> </table> </div> </div>					Formation	Depth (ft)	Notes	Rustler	1774		Yates	3284		Queen	4468		Delaware	5704		Bone Spring	6972		Wolfcamp	9402		Strawn	10464		Mississippian	10810		Woodford	11380		Devonian	11568		Montoya	13207		McKee	13653		GW	13900	
Formation	Depth (ft)	Notes																																														
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GW	13900																																															

WELLBORE SCHEMATIC AND HISTORY

		COMPLETION SCHEMATIC		O-A	APINUM: 30-025-03138						
FORM	DEPTH				OPERATOR: PALADIN ENERGY CORP						
					LEASENAME: LEA J STATE				WELL NO. 1		
					SURF LOC:	UL: E	SEC: 26	TWN: 18S	RNG: 35E		
					2310 FNL				330 FWL		
					BH LOC:	UL: E	SEC: 26	TWN: 18S	RNG: 35E		
					2310 FNL				330 FWL		
		TD 11715		PBD	KB		DF				
						GL					
Rustler	1735				POOL VACUUM;DEVONIAN, SOUTH				PERFS 11555-11585 P		
Yates	3240								11450-11478 A		
									OH		
Queen	4433	CASING RECORD									
			SIZE	DEPTH	CMT	HOLE SIZE	TOC				
		SURF.	11.75	450	475 sxs	17.5	0 Cir				
		INT1	8.625	3801	1764 sxs	11	0 Cir				
		PROD	5.5	11713	170 sxs	7.875	9275 TS				
		SPUD: 05/13/1960									
		COMP: 07/15/1960									
		P&A: 03/05/2008									
Bone Spring	6983										
Wolfcamp	9328	TOC 9275									
Penn	10218										
Mississippian	10580										
Woodford	11253										
Devonian	11392										
		PERFS 11438-11478									
		PERFS 11503-11528									
		TD 11750									
		5 1/2 @ 11750									
		TOC @ 8666'									
		PREPARED BY: Eddie Seay				UPDATED 06/25/13					

WELLBORE SCHEMATIC AFTER

COMPLETION SCHEMATIC		O-A	APINUM: 30-025-03137				
FORM	DEPTH		OPERATOR: PALADIN ENERGY CORP				
			LEASENAME: REEVES 26			WELL NO. 4	
			SURF LOC:	UL: K	SEC: 26	TWN: 18S	
						RNG: 35E	
			1654 FSL			1654 FWL	
			BH LOC:	UL: K	SEC: 26	TWN: 18S	
						RNG: 35E	
			1654 FSL			1654 FWL	
			TD 12230	PBD	KB	DF	
				GL			
			POOL VACUUM;DEVONIAN, SOUTH			PERFS 11515-11573 P	
						11658-11696 P	
						OH	
			POOL REEVES;WOLFCAMP, SOUTH			PERFS 9883-10002 P	
						Open Hole	
			POOL SWD;WOLFCAMP			PERFS 9883-10002 A	
						Open Hole	
			POOL SWD;DEVONIAN			PERFS 11512-11696 A	
						Open Hole 11730-12230	
			Casing Record				
				SIZE	DEPTH	CMT	HOLE SIZE
							TOC
			SURF.	13.375	297	250 sxs	17.5
			INT1	8.625	4230	1500 sxs	11
			PROD	5.5	9910	600 sxs	7.875
							7087 TS
			Csg tied in @ 5301				
			Delaware				
			Bone Spring 7000				
			TOC 7949 Calc				
			Wolfcamp 9500				
			Penn 10255				
			Mississippian 10608				
			Woodford 11282				
			Devonian 11512				
			5 1/2 @ 11730				
			New TD 12230				

13 3/8 @ 451

8 5/8 @ 3802

SWD-1092
8/6/2007

SWD-1092-A
9/2/2011

SPUD: 02/10/1960

COMP: 04/11/1960

P&A: 01/05/1985

Re-entry 01/18/2006

Perfs at 9125 sqz 200 sxs

Old TOC 9129 temp

pkw w/ 3 1/2 plastic coated tbng set @ 9805

within 100' upper most perfs

Perfs 9883-10002

2 7/8 tubing @ 10018

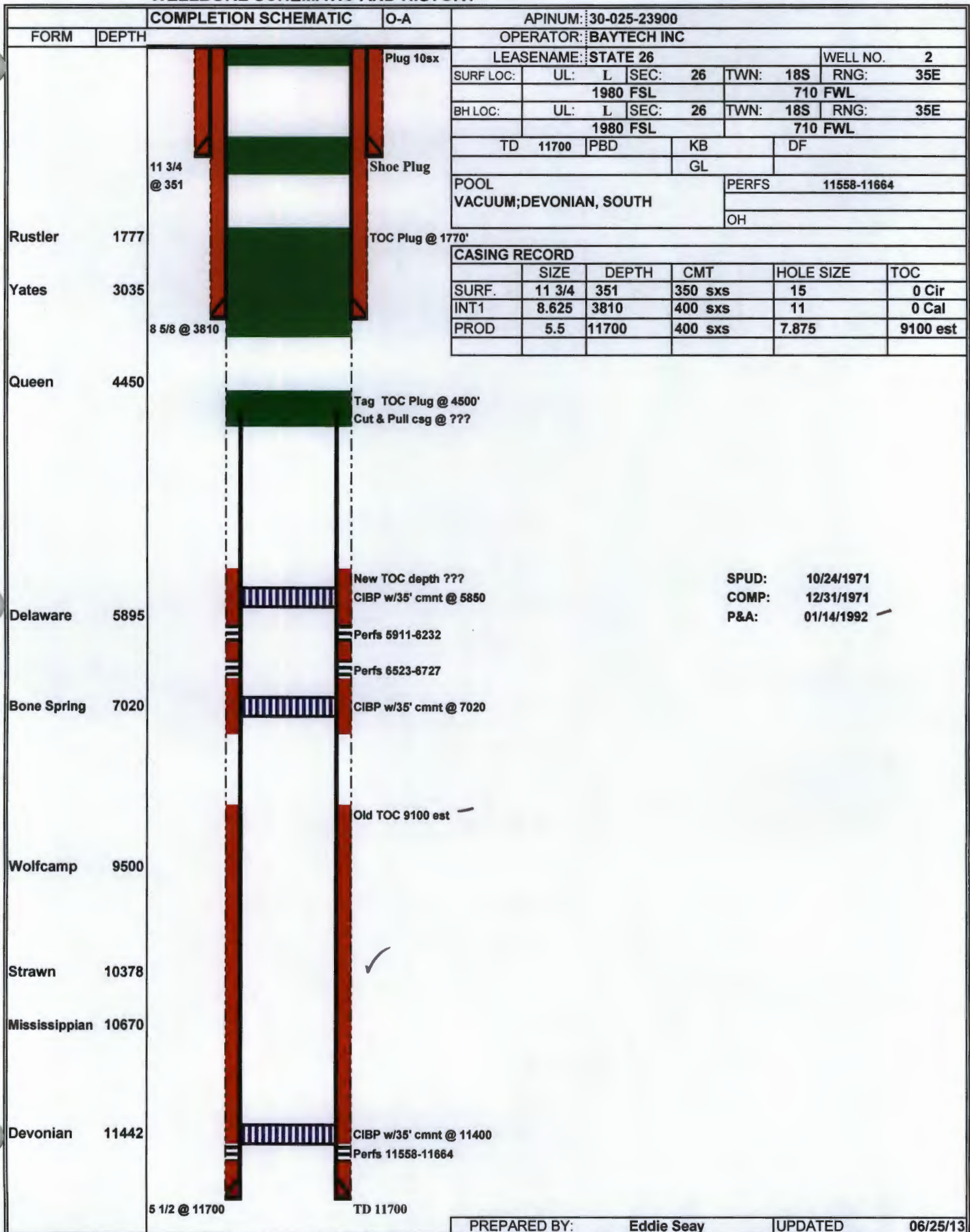
Perfs 11515-11573

Perfs 11658-11696

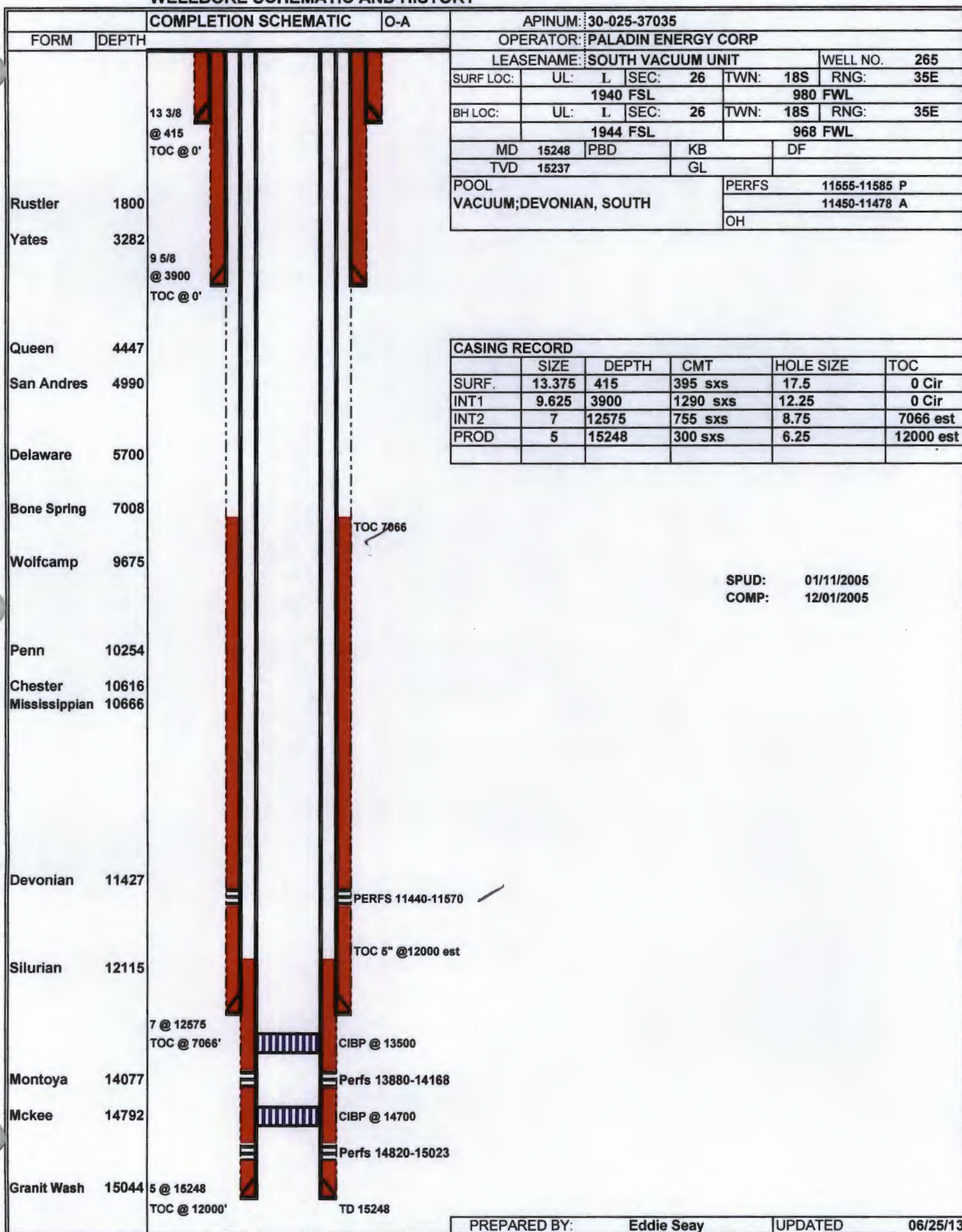
⊕ not in order } but in application

⊕ Not in order [needs to be corrected]

WELLBORE SCHEMATIC AND HISTORY



WELLBORE SCHEMATIC AND HISTORY

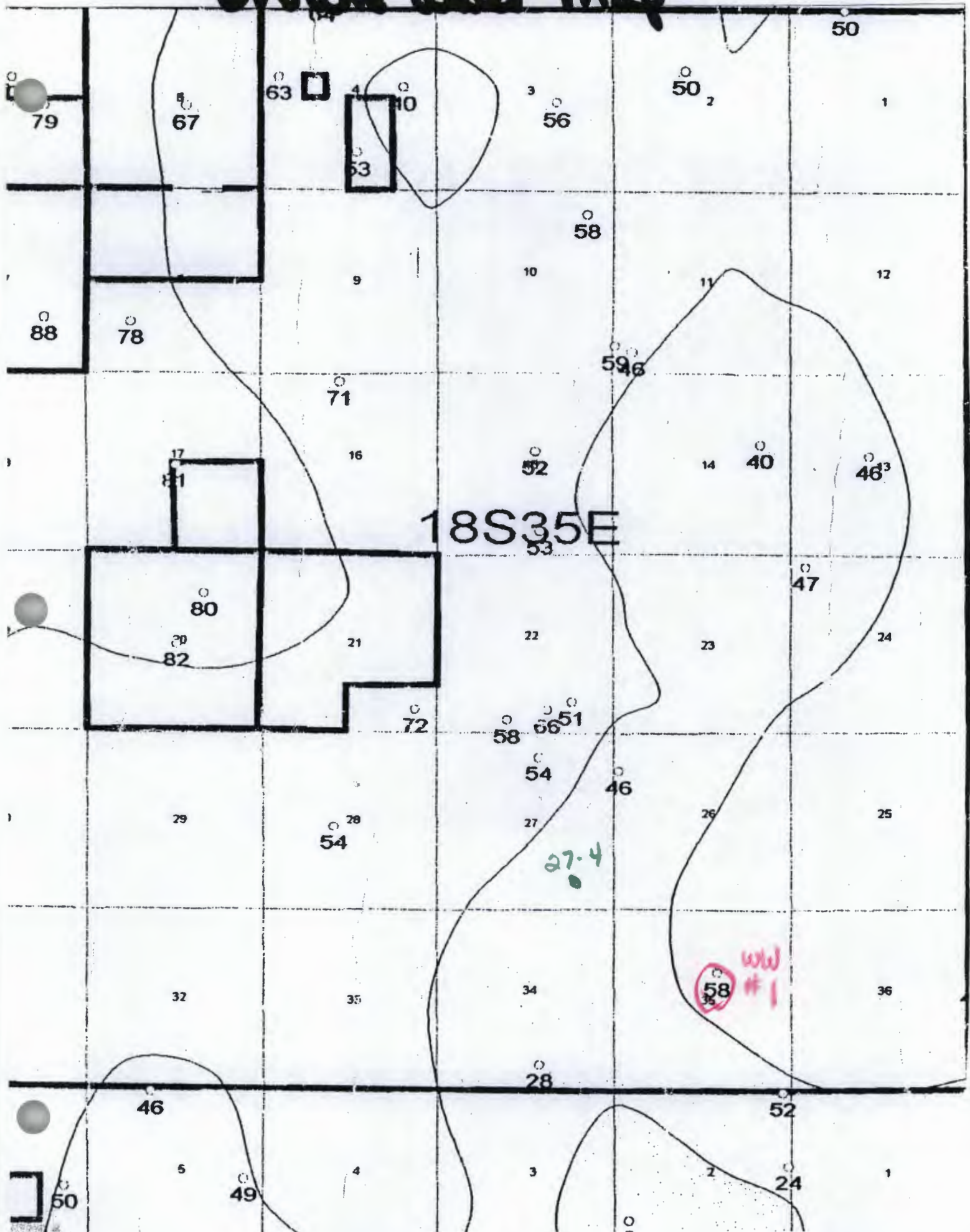


[illegible]

Water Sample Analysis

Pool	Section	Location Township	Range	Chlorides
North Justis Montoya	2	25S	37E	45440
North Justis McKee	2	25S	37E	58220
North Justis Fusselman	2	25S	37E	68533
North Justis Ellenburger	2	25S	37E	34151
Fowler Blinbry	22	24S	37E	116085
Skaggs Grayburg	18	20S	38E	84845
Warren McKee	18	20S	38E	85910
Warren Abo	19	20S	39E	91600
DK Drinkard	30	20S	39E	108855
Littman San Andres	8	21S	38E	38695
East Hobbs grayburg	29	18S	39E	6461
Halfway Yates	16	20S	32E	14768
Arkansas Junction San Andres	12	18S	38E	7171
Pearl Queen	28	19S	35E	114310
Midway Abo	17	17S	37E	38494
Lovinton Abo	31	16S	37E	22933
Lovington San Andres	3	16S	37E	4899
Lovington Paddock	31	16S	37E	93720
Mesa Queen	17	16S	32E	172530
Kemnitz Wolfcamp	27	16S	34E	49345
Hume Queen	9	16S	34E	124960
Anderson Ranch Wolfcamp	2	16S	32E	11040
Anderson Ranch Devonian	11	16S	32E	25702
Anderson Ranch Unit	11	16S	32E	23788
Caudill Devonian	9	15S	38E	20874
Townsend Wolfcamp	8	16S	38E	38695
Dean Perno Penn	5	16S	37E	44730
Dean Devonian	35	15S	38E	19525
South Denton Wolfcamp	26	15S	37E	54315
South Denton Devonian	36	15S	37E	34080
Medicine Rock Devonian	15	15S	38E	39760
Little Lucky Lake Devonian	29	15S	30E	23288
Wartz Abo	26	21S	37E	132770
Crosby Devonian	18	25S	37E	58220
Scarborough Yates Seven Rivers	7	26S	37E	3443(Reef)
Teague Simpson	34	23S	37E	114665
Teague Ellenburger	34	23S	37E	120345
Rhodes Yates 7 Rivers	27	26S	37E	144485
House SA	11	20S	38E	93365
House Drinkard	12	20S	38E	49700
South Leonard Queen	24	26S	37E	115375
Elliot Abo	2	21S	38E	55380
Scharb Bone Springs	5	19S	35E	30601
EK Queen	13	18S	34E	41890
East EK Queen	22	18S	34E	179630
Maljamar Grayburg SA	22	17S	32E	46079
Maljamar Paddock	27	17S	32E	115375
Maljamar Devonian	22	17S	32E	25418

Ground Water Map



Analytical Results For:

Eddie Seay Consulting
Eddie Seay
601 W. Illinois
Hobbs NM, 88242
Fax To: (505) 392-6949

Received: 06/24/2013
Reported: 06/27/2013
Project Name: PALADIN SWD WW #1
Project Number: NONE GIVEN
Project Location: SOUTH VACUUM - SECT 27

Sampling Date: 06/24/2013
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

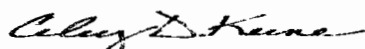
Sample ID: PALADIN SV - WW #1 (H301471-01)**Chloride, SM4500Cl-B****mg/L****Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	28.0	4.00	06/26/2013	ND	104	104	100	0.00	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

PALADIN ENERGY CORP.

July, 2013

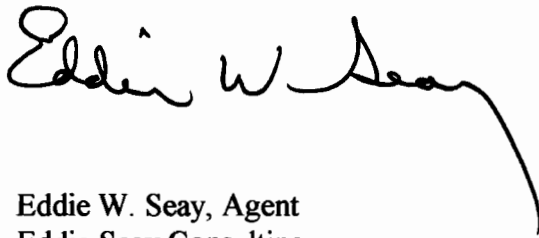
RE: South Vacuum Unit 27-4
Unit P, Section 27, Tws. 18 S., Rng. 35 E.
API #30-025-37112

Dear Sir:

In accordance with the Rules and Regulations of the Oil Conservation Division of the State of New Mexico, you are being provided a copy of the C-108, Application for Authorization to Inject in to the above captioned well.

Any questions about the permit can be directed to Eddie W. Seay, (575)392-2236. Any objections or request for hearing must be filed with the Oil Conservation Division within fifteen (15) days from the date received. The OCD address is 1220 S. Saint Francis Drive, Santa Fe, NM 87504, (505)476-3440.

Thank You,

A handwritten signature in black ink, reading "Eddie W. Seay". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Eddie W. Seay, Agent
Eddie Seay Consulting
601 W. Illinois
Hobbs, NM 88242
575-392-2236
seay04@leaco.net

LEASE OWNERS AND OFFSETS

LANDOWNER & MINERAL OWNER

NM State Land Office
310 Old Santa Fe Trail
Box 1148
Santa Fe, NM 87504-1148

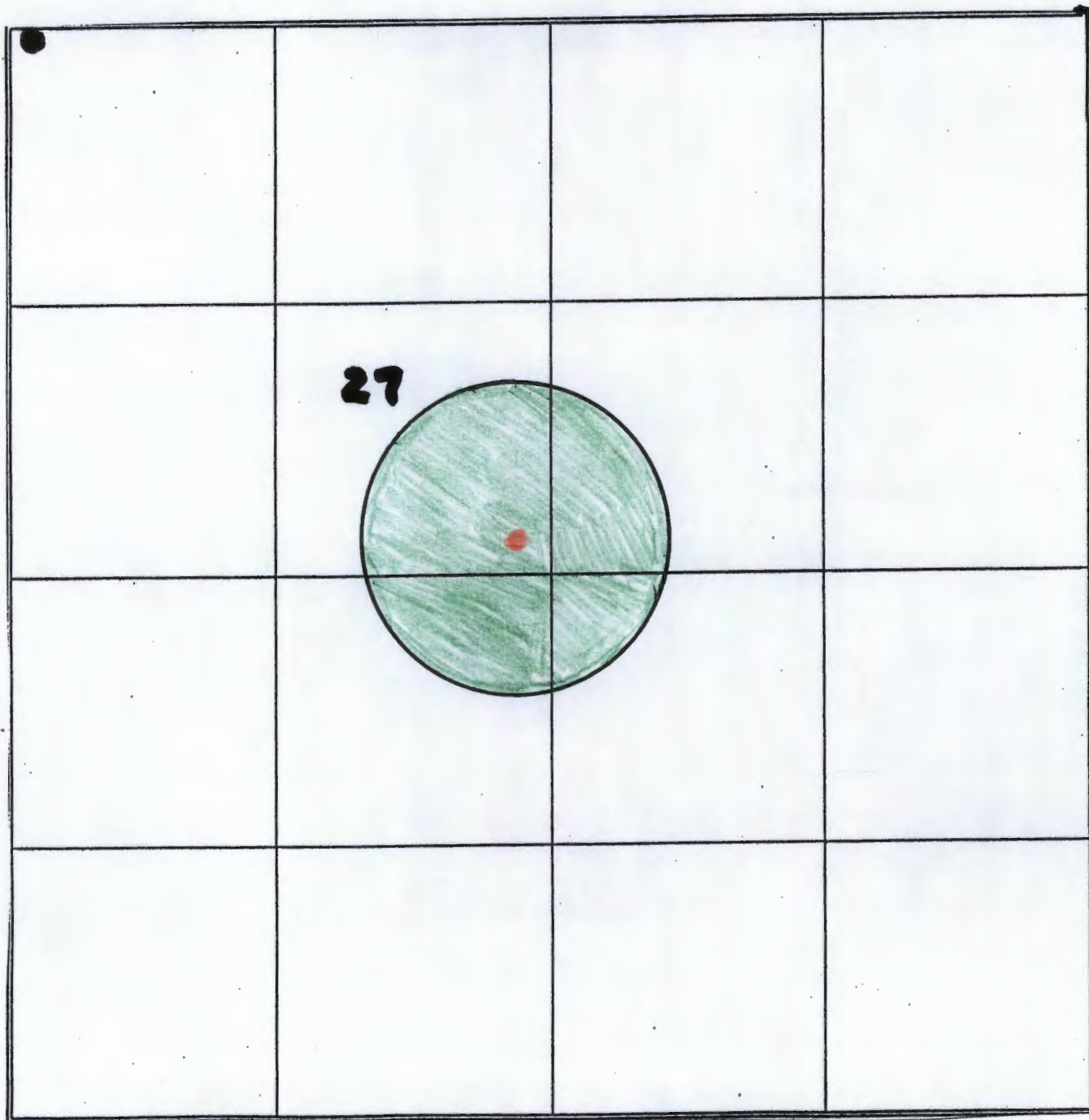
LAND LESSEE

Snyder Ranches, Ltd.
Box 2158
Hobbs, NM 88241

OFFSET OPERATOR & MINERAL OWNERS

XTO Energy Inc.
382 RR 3100
Aztec, NM 87410

Baytech, Inc.
Box 10158
Midland, TX 79702



Minerals - Paladin 27-4
P. 27-18-35

● State of N.M. - Paladin

● 27-4

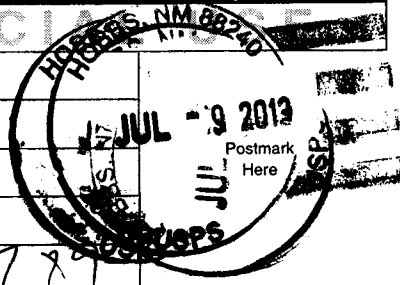
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PS Form 3800, August 2006

See Reverse for Instructions

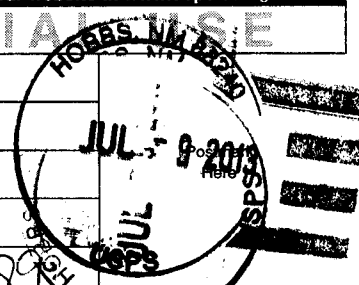
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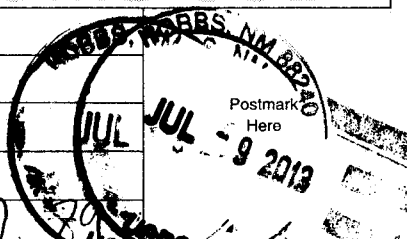
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 Aztec, NM 87410

PS Form 3800, August 2006

See Reverse for Instructions

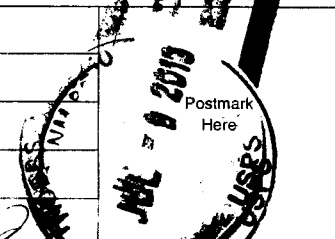
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 310 Old Santa Fe Trail
 Box 1148
 Santa Fe, NM 87504-1148

PS Form 3800, August 2006

See Reverse for Instructions

LEGAL NOTICE

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, Paladin Energy Corp., 10290 Monroe Dr., Ste. 301, Dallas, Texas 75229, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the South Vacuum Unit 27-4, located in Unit P, Section 27, Township 18 South, Range 35 East, Lea Co., NM. The injection formations are the Mississippian and Devonian through perforations from 10858' to 12400' below surface. Expected maximum injection rate is 8000 bpd., and the expected maximum injection pressure is 2000 psi or what the OCD allows. Any questions about the application can be directed to Eddie W. Seay, (575)392-2236, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504, within fifteen (15) days.

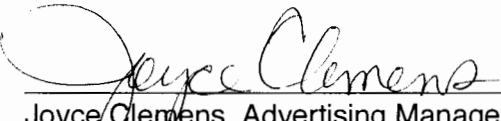
Affidavit of Publication

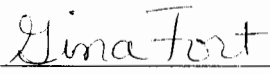
STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

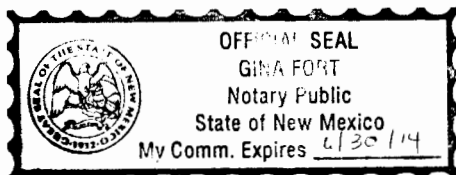
Joyce Clemens being first duly sworn on oath deposes and says that she is Advertising Manager of THE LOVINGTON LEADER, a thrice a week newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled Legal Notice was published in a regular and entire issue of THE LOVINGTON LEADER and not in any supplement thereof, for one (1) day(s), beginning with the issue of July 9 , 2013 and ending with the issue of July 9 , 2013.

And that the cost of publishing said notice is the sum of \$ 27.61 which sum has been (Paid) as Court Costs.


Joyce Clemens, Advertising Manager
Subscribed and sworn to before me this 9th day of July , 2013.


Gina Fort
Notary Public, Lea County, New Mexico
My Commission Expires June 30, 2014



Legal Notice

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, Paladin Energy Corp., 10290 Monroe Dr., Ste. 301, Dallas, Texas 75229, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the South Vacuum Unit 27-4, located in Unit P, Section 27, Township 18 South, Range 35 East, Lea Co., NM. The injection forma-

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Published in the Lovington Leader July 9, 2013.



C-108 Review Checklist: Received 07/24/13 Add. Request: Reply Date: Suspended: [Ver 8]

Issued Permit: WFX / PMX / SWD Number: 1444 Permit Date: 10/08/13 Legacy Permits/Orders: None

Well No. 274 Well Name(s): South Vacuum Unit (SVU)

API: 30-0 25-37122 Spud Date: 04/30/2005 New or Old (N) (UIC Class II Primacy 03/07/1982)

Footages 960 F&L 693 FEL Lot - Unit P Sec 29 Tsp 18S Rge 35E County Lea

General Location: West of Hobbs - 17 miles / Vacuum Pool: South Vacuum Field / Devonian 62010
area Willcat / McKee [13808 - 13934] Pool No.: 97368

Operator: Paladin Energy Corp. OGRID: South Vacuum Contact: Eddie Seay / consult.

COMPLIANCE RULE 5.9: Inactive Wells: 1 Total Wells: 55 Fincl Assur: YES Compl. Order? No IS 5.9 OK? Yes

Well File Reviewed (X) Current Status: Former producer - depleted / 100% H₂O - geo report attached / Paladin

Well Diagrams: Proposed New () Before Conversion (X) After Conversion (X) Are Elogs in Imaging?: Later log & Density / neutron

Planned Rehab Work to Well: Install new CIBP / w cmt cap at ~12630 / clean out / new lower perf

Well Construction Details:		Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement 5X or Cf	Cement Top and Determination Method
Planned <u>()</u> or Existing <u>(X)</u> Cond					
Planned <u>()</u> or Existing <u>(X)</u> Surface		<u>17 1/2 / 13 3/8</u>	<u>0 to 450</u>	<u>328</u>	<u>Circulated to surf</u>
Planned <u>()</u> or Existing <u>(X)</u> Intern Prod		<u>12 1/4 / 9 5/8</u>	<u>0 to 3943</u>	<u>1298</u>	<u>Circulated to surf</u>
Planned <u>()</u> or Existing <u>(X)</u> Long St Prod		<u>8 3/4 / 7</u>	<u>0 to 12550</u>	<u>810</u>	<u>estimated 6500</u>
Planned <u>()</u> or Existing <u>(X)</u> Liner		<u>8 3/4 / 5</u>	<u>12227 to 14230</u>	<u>262</u>	<u>Calc.</u>
Planned <u>()</u> or Existing <u>(X)</u> OH / PERF		<u>new 100% perfs</u>	<u>10858 (existing) 12400</u>	<u>Inj Length 1542</u>	
Injection Stratigraphic Units:		Depths (ft)	Injection & Confining Units	Tops?	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.			<u>Wolfcamp</u>	<u>9446</u>	Drilled TD <u>14230</u> PBTD <u> </u>
Confining Unit: Litho. Struc. Por.		<u>~1</u>	<u>Strawn</u>	<u>10570</u>	New TD <u> </u> New PBTD <u>12600 w/cibp</u>
Proposed Inj Interval TOP:		<u>10858</u>	<u>Chester / Miss</u>	<u>10857</u>	Open Hole <u>()</u> or Perfs <u>(X)</u> <u>amt</u>
Proposed Inj Interval BOTTOM:		<u>12400</u>	<u>Devonian</u>	<u>11754</u>	Tubing Size <u>4 1/2</u> Inter Coated? <u>Yes</u>
Confining Unit: Litho. Struc. Por.		<u>± 185</u>	<u>Silurian</u>	<u>12585</u>	Proposed Packer Depth <u>10760</u>
Adjacent Unit: Litho. Struc. Por.			<u>Montoya / upper Ord</u>	<u>13366</u>	Min. Packer Depth <u>10758</u> (100-ft limit)
					Proposed Max. Surface Press <u>1800-2000</u>
					Admin Inj. Press <u>2172</u> (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P () Noticed? NA BLM Sec Ord NA WIPP () Noticed? NA SALADO: T: B: 1774 CLIFF HOUSE NA

Fresh Water: FW Formation Ogallala Max Depth ~160 Wells? 4 in 22 Analysis? Yes Hydrologic Affirm Statement Yes

Disposal Fluid: Formation Source(s) Offset production / McKee / Devonian Analysis? Book On Lease () Operator Only (X) or Commercial (X)

Disposal Interval: Injection Rate (Avg/Max BWPD): 8000 Protectable Waters: NO CAPITAN REEF: thru adjacent NO

H/C Potential: Producing Interval? Yes Formerly Producing? Yes Method: E Log / Mudlog / DST / Depleted (X) Other Geo Rpt -

AOR Wells: 1/2-M Radius Map? Yes Well List: Yes Total No. Wells Penetrating Interval: 8 Submersible to test production / 100% water Horizontals? 0

Penetrating Wells: No. Active Wells 5 Num Repairs? 0 on which well(s)? (includes 2 active SWDs) Diagrams? Yes

Penetrating Wells: No. P&A Wells 3 Num Repairs? 0 on which well(s)? Diagrams? Yes

NOTICE: Newspaper Date 7/9/13 Mineral Owner SLO Surface Owner SLO N. Date 7/9/13

RULE 26.7(A): Identified Tracts? Yes Affected Persons: Snyder Ranch / Baytech / XTO / Return Refs N. Date 7/9/13

Permit Conditions: Issues: Top of cmt for liner & 7-inch casing

Add Permit Cond: Run CBL or equivalent before install packer / tubing

**New Mexico Office of the State Engineer
Well Reports and Downloads**

Township: **18S** Range: **35E** Sections: _____

NAD27 X: _____ Y: _____ Zone: _____ Search Radius: _____

County: _____ Basin: _____ Number: _____ Suffix: _____

Owner Name: (First) _____ (Last) _____ ☐ Non-Domestic ☐ Domestic ☒ All

Well / Surface Data Report

Avg Depth to Water Report

Water Column Report

Clear Form

WATERS Menu

Help

AVERAGE DEPTH OF WATER REPORT 05/31/2005

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet)		
								Min	Max	Avg
L	18S	35E	02				3	51	52	51
L	18S	35E	03				1	62	62	62
L	18S	35E	04				4	50	70	58
L	18S	35E	05				7	60	75	69
L	18S	35E	06				5	60	110	89
L	18S	35E	07				8	75	95	85
L	18S	35E	09				1	72	72	72
L	18S	35E	10				1	49	49	49
L	18S	35E	11				1	48	48	48
L	18S	35E	13				1	135	135	135
L	18S	35E	14				2	90	90	90
L	18S	35E	16				2	65	84	75
L	18S	35E	17				4	90	150	124
L	18S	35E	18				2	90	90	90
L	18S	35E	19				2	70	70	70
L	18S	35E	20				1	50	50	50
L	18S	35E	21				2	60	60	60
L	18S	35E	22				5	65	95	75
L	18S	35E	23				2	78	78	78
L	18S	35E	26				2	60	60	60
L	18S	35E	27				4	65	70	68
L	18S	35E	29				2	95	95	95
L	18S	35E	32				1	58	58	58
L	18S	35E	33				1	80	80	80
L	18S	35E	35				3	55	60	58

Record Count: 67

Information from Reeves 26 well # 4 / SWD-1092

Question 6) Please explain why you want to inject into the Wolfcamp and what effect this injection will likely have on existing Wolfcamp producing wells and Wolfcamp oil and gas saturations? Send plots of Wolfcamp production in this area and for this well in particular (labeled as to OCD Pools producing). Send Geologic structure maps as needed to show this well's relative position in the structure and in the reservoir.

Answer to 6a) Paladin wants to dispose of water into the Wolfcamp and Devonian because these formations will take water with no effect on any production in the area. The Wolfcamp production rates are marginal because of low bottom hole pressures and low porosities and permeabilities in the field. Paladin does not believe that injection will cause any change in oil or gas saturations in the Wolfcamp. The majority of the injected water will go into the more porous and permeable Devonian.

6b) Paladin's South Vacuum 26 # 1 and South Vacuum 26 # 3 wells are both Wolfcamp producers in the South Reeves; Wolfcamp Pool. Both are on rod pump. The average production for South Vacuum 26 # 1 and the South Vacuum 26 # 3 well are as follows:

South Vacuum 26 # 1 averages 4 BOPD, 50 MCFGPD, 14 BWPD

South Vacuum 26 # 3 averages 3 BOPD, 10 MCFGPD, 3 BWPD

Question 7) Same as 6) above for the Devonian. Also what is the regional oil-water contact in this Devonian?

Answer to 7a) The effects of re-injection into the Devonian should not adversely effect saturations because the water contact has been at the top of the formation for some time. This is a strong water drive interval and production is through high volume withdraw with only about a 1% oil cut. The South Vacuum; Devonian wells in the vicinity of the proposed SWD well are produced on electrical submersible pumps. The average production from these wells are as follows:

South Vacuum 26 # 5 averages 32 BOPD, 0 MCFGPD, 2390 BWPD

Reeves 26 # 2 averages 21 BOPD, 0 MCFGPD, 3200 BWPD

As evidenced by the large amount of water withdraw from sub pump operations the water contact is at the top of the formation. There is no well capable of flowing to surface and in Paladin's opinion there is no oil-water contact below the intersection of the base of the Woodford Shale and the top of the Devonian formation.

Paladin has not prepared any structure maps of the Wolfcamp or Devonian formations. Paladin does have a recent Geomap structure maps on the Devonian and the Strawn formations. However, the lease agreement with Geomap Company does not permit reproduction and sharing structural maps.


Eddie W Seay
Eddie Seay Consulting



PALADIN ENERGY CORP.

Oil Conservation Division
Engineering and Geological Services Bureau
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Re: South Vacuum 274 SWD
Application to Convert Well to SWD Operations
South Vacuum Field
Lea County, New Mexico

Dear Sir/Madam,

In support of the above referenced SWD application, please find the following information. Paladin Energy Corp. re-completed the South Vacuum 274* well on 5/13/2013 in the Devonian formation with perforations from 11,760' to 11,820' and 11,840' to 11,900' for a total of 120' and 240 holes. The well was tested from 5/14/2013 to 5/24/2013 on electrical submersible pump and produced 100% water throughout the test, at an average rate of approximately 3,000 barrels of water per day. There was no oil produced and the Devonian was deemed uneconomical at this bottom hole location.

The South Vacuum Devonian structure is an elongated anticlinal feature, defined by a large northwest to southeast trending fault that has trapped considerable oil accumulations on the up-thrown block. The South Vacuum 274 well was originally drilled and completed on 10/12/2005 to a depth of approximately 14,200' as a deep McKee gas producer. At the Devonian level, this well is the lowest wellbore on the structure (please refer to the enclosed map).

The top of the Devonian formation in the South Vacuum 274 is at a sub-surface depth of -7,748'. The nearest producing Devonian wells are the South Vacuum 265* at a sub-surface depth of -7,508', the South Vacuum 354* at -7580' and the Reeves 26-2 at -7,534'. These wells are all approximately 200 feet up-dip of the South Vacuum 274 and near the apex of the anticline. Paladin operates the only Devonian producing wellbores in the South Vacuum field and with the conversion of the South Vacuum 274 as an additional SWD well, we plan to increase our withdrawal rates on our present Devonian wellbores and to re-complete and/or drill additional wells at favorable locations in the field.

If you have any questions or need additional information, please feel free to call me at 214-654-0132 Ext 3, or e-mail me at davidplaisance@paladinenergy.com.

Thank you,

A handwritten signature in black ink, appearing to read "David Plaisance", with a stylized flourish at the end.

David Plaisance

V.P. Exploration & Production

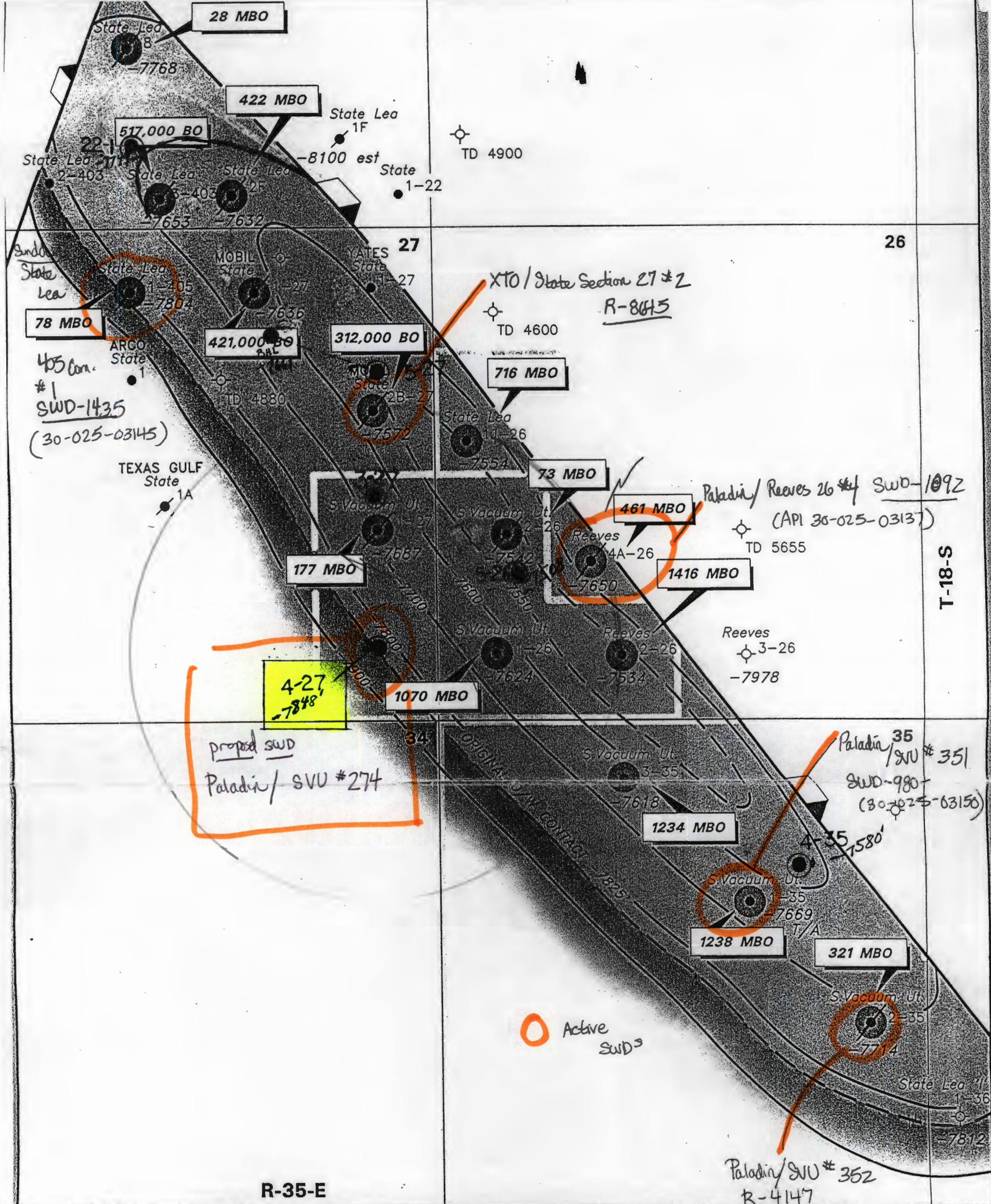
*South Vacuum 274 is marked on the map as #4-27

*South Vacuum 265 is marked on the map as #5-26

*South Vacuum 354 is marked on the map as #4-35

*Reeves 26-2 is marked on map as #2-26

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2013 JUL 23 PM 3:07



LEGEND

● **Devonian Producer**

0 1000' 2000'

PALADIN ENERGY CORP.
10290 Monroe Drive
Suite 301
Dallas, Texas 75229

SOUTH VACUUM FIELD
Lea County, New Mexico

Structure Map
DEVONIAN
Contour Interval = 100'